

REMARKS

Status of the Claims

Claims 18-22 are currently pending in this application. By this amendment, claim 18 has been amended to recite that in the microparticle assembly step, the magnetic field is uniformly distributed over the substrate surface. Support for this amendment to claim 18 can be found throughout the specification as filed, *inter alia*, for example, at [0101] - [0104] and the examples. Further, claim 18 has been amended to remove the limitations that: 1) the position of the coils or magnets is fixed during assembly of the microparticles; and 2) the strength of the magnetic field may be varied without moving the coils or magnets. Applicants respectfully submit that no new matter has been added by these amendments.

Rejection of claims 18-22 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement

The Examiner has rejected claims 18-22 as failing to comply with the written description requirement, arguing that the specification fails to provide support for the magnetic field being “generated by coils or magnets whose spatial position is fixed during said assembly” and for the ability to vary the spacing between particles “without moving the coils or magnets.” In order to expedite prosecution, Applicants have amended claim 18 to remove this content. In light of the amendments to claim 18, Applicants respectfully request reconsideration and withdrawal of this rejection.

Rejection of claims 18-22 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,115,884 to Walt *et al.* in view of U.S. Patent No. 6,013,531 to Wang and further in view of U.S. Patent No. 5,602,042 to Farber

The Examiner has rejected claims 18-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,115,884 to Walt *et al.* (hereinafter “Walt”) in view of U.S. Patent No. 6,013,531 to Wang (hereinafter “Wang”) and further in view of U.S. Patent No. 5,602,042 to Farber (hereinafter “Farber”). Applicants hereby traverse this rejection.

The Examiner argues that Walt teaches a method of multiplex analysis of analytes in solution, comprising providing subpopulations of microspheres with distinct optical response

signatures or different associated fluorescent dyes with capture moieties thereon, assembling the microspheres into an array and adding a sample, illuminating the array, and decoding the array by comparison to a known analyte or a library of optical response signatures for its corresponding microsphere subpopulation type. The Examiner argues that it would have been obvious to modify the method of Walt by using fluorescent magnetic beads as markers in assays, as taught by Wang. The Examiner further argues that it would have been obvious to modify the method of Walt and Wang by applying a magnetic field to the beads to form an assembly, as taught by Farber.

Applicants respectfully submit that Farber does not teach the magnetic assembly step recited by claim 18 as now amended. Specifically, Farber does not teach or suggest the particular magnetic field characteristics recited in the amended claim. Claim 18 as now amended recites the presence of a magnetic field with uniform distribution over the substrate surface. The present specification notes that a particularly useful structure for generating a uniform distribution is a pair of electromagnetic coils with opposing individual field directions. By adjusting the gap between the coils or the relative position of the coils and by varying the individual currents in the coils, the force on the microparticles can be controlled (see [0101]). As a consequence of this uniform distribution, it is unnecessary to move the coils or magnets to vary the spacing between the particles in the array. The magnetic field strength may simply be increased to develop ordered planar assemblies of field-dependent number density (or average inter-particle distance) (see [0102]).

Example 3 of the present application demonstrates this concept, noting that colloidal microparticles with a finite diamagnetic susceptibility disposed on a planar substrate can be assembled into ordered arrays in response to increasing magnetic fields. For a given particle type's diamagnetic susceptibility, the magnetic field strength may be adjusted to realize the desired configuration of the microparticle assembly.

In clear contrast to the magnetic field recited in claim 18 of the present application, the magnetic field in Farber is varied spatially and thus is inherently non-uniform. The magnetic field taught by Farber relies on magnetic posts extending from a magnet to a plate collection

surface to vary the strength of the field across the collection surface (see column 7, lines 26-30). The position of these magnetic posts is fixed, and therefore, the final collection pattern of the particles is fixed. The physical location of these magnet posts must be varied to provide arrays with different configurations.

Further, there is no suggestion in Farber that the strength of the magnetic field may be varied to vary the spacing between particles in the array. Although Farber notes that the spatially varying magnetic field described therein affords control over the distribution of cells collected against the collection plate (see column 11, lines 32-33), there is no suggestion that this 'distribution' relates to inter-particle spacing. Rather, Farber uses the magnetic posts previously described to control merely the location of cell arrays on the plate. Cells will accumulate on the collection plate surface at the site of the magnetic posts. These posts do not allow for control over the precise spacing between particles within each of these arrays, as recited in claim 18 of the present application.

In light of the absence of any teaching or suggestion in Farber to employ a uniformly distributed magnetic field that allows the spacing between the particles within the array to be varied by varying the strength of the magnetic field as recited in claim 18, the presently claimed invention is not obvious over the cited references. Applicants respectfully request reconsideration and withdrawal of this rejection.

CONCLUSION

Applicants respectfully submit that the present application is in condition for allowance and request early notification of the same. Should the Examiner believe the prosecution of the application can be facilitated by a discussion of the issues presented, the Examiner is invited to contact Applicant's representative at the number below.

Applicants believe no fees are due other than those provided elsewhere in this response. However, if additional fees are due, the Commissioner is hereby authorized to charge any

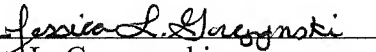
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required fees or credit any overpayment to Deposit Account No. 09-0528 under order number B252 01280US.

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